This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Major, Municipal permit. The discharge results from the operation of a 4.0 MGD wastewater treatment plant with future expansion to 4.6 MGD. This permit action consists of updating the WQS and updating boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Dale Service Section 8 STP, 5609 Mapledale Plaza, Dale City, VA 22193 — SIC Code : 4952 WWTP

   Facility Location: 14420 Delaney Rd, Dale City, VA — County: Prince William

   Facility Contact Name: Norris Sisson — Telephone Number: (703) 590-4495

2. Permit No.: VA0024678 — Expiration Date of previous permit: June 16, 2008

   Other VPDES Permits associated with this facility: VAN010058

   Other Permits associated with this facility: None

   E2/E3/E4 Status: NA

3. Owner Name: Dale Service Corporation

   Owner Contact/Title: Norris Sisson, President — Telephone Number: (703) 590-4495

4. Application Complete Date: December 18, 2007

   Permit Drafted By: Alison Thompson — Date Drafted: 5/27/08

   Draft Permit Reviewed By: Joan Crowther — Date Reviewed: 6/5/08

   Public Comment Period : Start Date: 8/14/08 — End Date: 9/15/08

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name :	Neabsco Creek		
Drainage Area at Outfall:	0.9 sq.mi.	River Mile:	1ANEA009.15
Stream Basin:	Potomac	Subbasin:	Potomac
Section:	7	Stream Class:	III
Special Standards:	b	Waterbody ID:	VAN-A25R-01
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.155 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.090 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.018 MGD
303(d) Listed:	Yes	30Q10 Flow:	0.016 MGD
TMDL Approved:	Yes	Date TMDL Approved:	PCB on 10/31/07
			Bacteria TMDL drafted and sent to EPA 1/2008

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

   ✓ State Water Control Law
   ✓ Clean Water Act
   ✓ VPDES Permit Regulation
   ✓ EPA NPDES Regulation
   ✓ EPA Guidelines
   ✓ Water Quality Standards
   ✓ Other (Potomac Embayment Standards)

7. Licensed Operator Requirements: Class I

8. Reliability Class: Class I

9. Permit Characterization:

✓ Private	___ Effluent Limited	✓ Possible Interstate Effect
___ Federal	✓ Water Quality Limited	___ Compliance Schedule Required
___ State	✓ Toxics Monitoring Program Required	___ Interim Limits in Permit
___ POTW	___ Pretreatment Program Required	___ Interim Limits in Other Document
✓ TMDL		

10. Wastewater Sources and Treatment Description:

This facility is a 4.0 MGD privately owned treatment works with preliminary (mechanical screening), secondary treatment Sequencing Batch Reactors, followed by secondary sedimentation, and advanced wastewater treatment (chemical addition/sedimentation followed by filtration). Ultraviolet light radiation is utilized for disinfection prior to discharge to Neabsco Creek. Dale Service Section 8 completed an upgrade of the treatment works so it has nitrification capability. Work has started for the upgrades and installation of the additional equipment necessary to obtain the CTO for the 4.6 MGD flow tier.

The 4.6 MGD flow tier was added to the VPDES permit in a 2006 permit modification.

See the permit file for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic and Commercial	See Item 10 above.	4.0 MGD	38°38'48" 77°20'40"
See Attachment 2 for (Occoquan Quadrangle, DEQ #194A) topographic map.				

11. Sludge Treatment and Disposal Methods:

Secondary sludge is pumped to aerobic digesters, aerated and dewatered, and transferred to a gravity thickener where it is blended with the chemical sludge. The combined sludge is dewatered and temporarily stored onsite. Disposal consists of land application by a commercial hauler.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2

River mile 4.0	Dale Service Section One (VA0024724) is a PVOTW facility that discharges to an Unnamed Tributary to Neabsco Creek.
River Mile 2.89	VADEQ Ambient Water Quality Monitoring Station (1ANEA002.89) at the U.S. Route 1 bridge.
River Mile 1.57	H. L. Mooney (VA0025101) is a POTW facility that discharges to the tidal portion of Neabsco Creek.
River Mile 2.89	Citizen monitoring station 1aNEA-N1_SOS near the U.S. Route 1 bridge
River Mile 0.57	VADEQ Ambient Water Quality Monitoring Station (1ANEA000.57) midway into Neabsco Bay.

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill Prevention Measures
Aluminum Chloride (Ultrafloc 121 by Geochemical)	2-10,000 gallon tanks (new) 2-5,000 gallon tanks (old)	Double walled
Magnesium Hydroxide	2-5,200 gallon tanks	Double walled and secondary containment
Polymer	1-500 gallon tank	Double walled
Diesel fuel for the generator	1-2,000 gallon tank	Double walled and secondary containment

14. Site Inspection:
A full technical inspection was performed by Beth Biller DEQ-NRO Inspections on October 18, 2006.

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

Fecal coliform monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. Sufficient exceedances of the instantaneous fecal coliform bacteria criterion (5 of 17 samples - 29.4%) were recorded at DEQ's ambient water quality monitoring station (1aNEA002.89) at the Route 1 Bridge to assess this stream segment as not supporting of the recreation use goal for the 2006 water quality assessment. The aquatic life and wildlife uses are considered fully supporting. Citizen monitoring finds a high probability of adverse conditions for biota, noted by an observed effect for the aquatic life use. The fish consumption use was not assessed. The receiving stream is on the current 303(d) list for an impairment of bacteria. A TMDL has been drafted for the free-flowing portion of Neabsco Creek and was submitted to EPA in January 2008 for approval.

There is a downstream impairment for the Potomac River and its tidal tributaries, including tidal Neabsco Creek, for PCBs in fish tissue. The TMDL did not include the receiving stream, as it was not listed for a PCB in fish tissue impairment; however, upstream facilities were included in the TMDL if they were considered significant sources. The facilities were identified as significant sources and provided WLAs in the TMDL.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law in 2005 to include the *Chesapeake Bay Watershed Nutrient Credit Exchange Program*. This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Neabsco Creek is located within Section 7 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 3 details other water quality criteria applicable to the receiving stream.

Ammonia:
The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. Effluent pH data from January 2005 to March 2008 were reviewed. During the last permit reissuance, staff believed that the pH values were artificially depressed due to the chemical treatment for total phosphorus removal and that the pH would not be representative of treatment works that are designed to nitrify, so a default pH value of 7.5 s.u. was used for the calculations for the acute and chronic ammonia as nitrogen Water Quality Criteria. Dale Service Section Eight completed the facility upgrade, so staff used the most recent effluent data to derive the 90% percentile value. A pH of 7.01 was used for the calculations presented in Attachment 3. The current permit does not require Dale Service Section 8 to monitor effluent temperature, so the 90th percentile temperatures (°C) will be carried forward as part of this reissuance process.

The 7Q10 and 1Q10 for November through March (non-PES months) are not zero, so the Mixing Zone program was used to determine the mixing zone predictions. The mixing zone prediction determined that a complete mix assumption is appropriate. The mixing zone calculations are found in Attachment 4.

Metals Criteria:
The 7Q10 of the receiving stream is zero and the downstream ambient data is influenced by both the Dale Service treatment works, so the average for the effluent data for hardness will be used to determine the metals criteria. The hardness-dependent metals criteria in Attachment 3 are based on the average effluent value of 89 mg/L.

Bacteria Criteria: The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

1) *E. coli* bacteria per 100 ml of water shall not exceed the following:

	Geometric Mean[1]	Single Sample Maximum
Freshwater *E. coli* (N/100 ml)	126	235

[1]For two or more samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Neabsco Creek, is located within Section 7 of the Potomac Basin. This section has been designated with a special standard of b.

Special Standard “b” (Potomac Embayment Standards) established effluent standards for all sewage plants discharging into Potomac River embayments and for expansions of existing plants discharging into non-tidal tributaries of these embayments. 9 VAC 25-415, Policy for the Potomac Embayments controls point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 Bridge in King George County. The regulation sets effluent limits for $CBOD_5$, total suspended solids, phosphorus, and ammonia, to protect the water quality of these high profile waterbodies.

d) Threatened or Endangered Species

The following threatened or endangered species were identified within a 2 mile radius of the discharge: Largemouth Bass, Smallmouth Bass, Bluegill, Yellow Bullhead, Creek Chub, Creek Chubsucker, Blacknose Dace, Rosyside Dace, Fantail Darter, numerous Sunfish species, Eastern Cricket Frog, four Minnow species, Song Sparrow, and the Tufted Titmouse. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge. The database search results are found in the reissuance file.

e) Maryland Water Quality Standards

Dale Service Section Eight discharges to Neabsco Creek, which is a tributary to the Potomac River. The discharge is approximately 10 miles from the Maryland State line. Staff reviewed the State of Maryland's Water Quality Standards and believes that the effluent limitations established in this permit will comply with Maryland's water quality standards at the point Neabsco Creek enters the Potomac River.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 since the 7Q10 of Neabsco Creek is zero and at times the only flow is from the Dale Service Section 8 effluent. It is staff's opinion that streams comprised entirely of effluent are Tier I. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:
Effluent data obtained from the permit application and DMRs has been reviewed and determined to be suitable for evaluation. Effluent data were reviewed; the data file is stored electronically and is available on the common drive at DEQ-NRO. The facility has an excellent compliance history in the past few years, and there have been no exceedances of the established limitations.

The following pollutants require a wasteload allocation analysis*:* ammonia as nitrogen and zinc.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage and the application indicates that zinc is present in the discharge. As such, Attachments 3 and 4 detail the WLA derivations and mixing analysis results for these pollutants.

c) Effluent Limitations Policy for the Potomac River Embayment (PPRE), Outfall 001 –

The PPRE included monthly average effluent limits that apply to all sewage treatment plants:

Parameter	Monthly Average (mg/L)
$cBOD_5$	5
Total Suspended Solids	6
Total Phosphorus	0.18
NH_3 (Apr 1 – Oct 31)	1

The PPRE states that the "above limitations shall not replace or exclude the discharge from meeting the requirements of the State's Water Quality Standards (9 VAC 25-260-10 et seq.)."

d) Effluent Limitations Toxic Pollutants, Outfall 001 –

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Ammonia as N (April through October)

Since the PPRE is more stringent than the current Water Quality Criteria, the April through October monthly average limit at both flow tiers will be 1.0 mg/L. The weekly average limit will be 1.5 mg/L based on the PPRE monthly average limit of 1.0 mg/L multiplied by a 1.5 multiplier.

Ammonia as N (November through March)

The existing limits at both flow tiers shall be carried forward with this reissuance. Derivation of the limits are found in Attachment 5.

2) Metals/Organics:

No limits are needed for zinc and copper (Attachment 5) since there is no reasonable potential to exceed the WLA.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

The weekly average concentrations for the PPRE parameters are calculated by using the monthly average concentration and multiplying by a 1.5 multiplier.

The $cBOD_5$ monthly average concentration is 5 mg/L and is based on the PPRE. The weekly average concentration is 8 mg/L.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

The TSS monthly average concentration is 6.0 mg/L and is based on the PPRE. The weekly average concentration is 9.0 mg/L.

pH limitations are set at the water quality criteria.

Dissolved oxygen (D.O.) has a daily minimum concentration of 6.0 mg/L and is based on original modeling conducted (Attachment 6) and is set to meet the water quality criteria for D.O. in the receiving stream.

The Total Phosphorus limitation of 0.18 mg/L is based on the PPRE. The weekly average concentration is 0.27 mg/L.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9 VAC 25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries.

The State Water Control Board adopted new Water Quality Criteria for the Chesapeake Bay in March 2005. In addition to the Water Quality Standards, there are three new regulations that necessitate nutrient limitations:

- 9 VAC 25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires discharges with design flows of $\geq$0.04 mgd to treat for TN and TP to either BNR levels (TN = 8 mg/l; TP = 1.0 mg/l) or SOA levels (TN = 3.0 mg/l and TP = 0.3 mg/l).

- 9 VAC 25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities with design flows of $\geq$0.5 mgd limiting the mass loading from these discharges.

- 9 VAC 25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* was approved by the State Water Control Board on September 6, 2006 and became effective January 1, 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility obtained coverage under this general permit as was assigned VPDES permit number VAN10058.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, and Total Nitrogen, are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9 VAC 25-820.

Since the facility is subject to the PPRE and monthly average Total Phosphorus limitations at both flow tiers, the Year-to-Date and Calendar Year annual average for Total Phosphorus are not included since the monthly averaging period is more stringent. The Year-to-Date and Calendar Year reporting shall continue to be required under the General Permit. Orthophosphate monitoring shall be removed from this individual permit and shall be reported through the General Permit.

Dale Service Section 8 used Water Quality Improvement Funds to upgrade the facility to BNR treatment. As such, an annual average effluent limitation of 8.0 mg/L for Total Nitrogen, as well as monthly and Year-To-Date calculations, are included in this individual permit at the 4.0 MGD flow tier. The facility is pursuing additional funding to upgrade the facility to ENR technology to achieve an annual average Total Nitrogen concentration of 3.0 mg/L; so the permit shall include an annual average TN concentration of 3.0 mg/L in the Part I.A. effluent limitation pages for the 4.6 MGD tier.

f) Effluent Limitations and Monitoring Summary.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for Total Phosphorus monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 8.3438.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 4.0 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the issuance of the CTO for the 4.6 MGD flow tier or expiration date, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
$CBOD_5$	6	5 mg/L 76 kg/day	8 mg/L 120 kg/day	NA	NA	1/D	24HC
Total Suspended Solids (TSS)	6	6.0 mg/L 91 kg/day	9.0 mg/L 140 kg/day	NA	NA	1/D	24HC
DO	3, 7	NA	NA	6.0 mg/L	NA	1/D	Grab
Ammonia as N (mg/L) Apr - Oct	6	1.0 mg/L 15 kg/day	1.5 mg/L 23 kg/day	NA	NA	1/D	24HC
Ammonia as N (mg/L) Nov - March	3	2.2 mg/L	2.7 mg/L	NA	NA	1/D	24HC
E. coli (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/D	Grab
TKN	3, 5	NL mg/L	NA	NA	NA	1/W	24HC
Nitrate+Nitrite, as N	3, 5	NL mg/L	NA	NA	NA	1/W	24HC
Total Nitrogen [a.]	3, 5	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date [b.]	3, 5	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year [b.]	3, 5	8.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	6	0.18 mg/L 6.0 lb/day	0.27 mg/L 9.0 lb/day	NA	NA	1/D	24HC
Chronic Toxicity – *C. dubia* (TU_c)		NA	NA	NA	NL	1/YR	24HC
Chronic Toxicity – *P. promelas* (TU_c)		NA	NA	NA	NL	1/YR	24HC

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. 9 VAC 25-40 (Nutrient Regulation)
6. Potomac Embayment Standards
7. Stream Model

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.
IS = Immersion stabilization.

1/D = Once every day.
1/W = Once every week.
1/M = Once every month.
1/YR = Once every year.

24HC = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty-four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty-four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19.b Effluent Limitations/Monitoring Requirements:

Design flow is 4.6 MGD.
Effective Dates: During the period beginning with the issuance of the CTO for the 4.6 MGD flow and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
$cBOD_5$	6	5 mg/L 87 kg/day	8 mg/L 140 kg/day	NA	NA	1/D	24HC
Total Suspended Solids (TSS)	6	6.0 mg/L 100 kg/day	9.0 mg/L 160 kg/day	NA	NA	1/D	24HC
DO	3, 7	NA	NA	6.0 mg/L	NA	1/D	Grab
Ammonia as N (mg/L) Apr - Oct	6	1.0 mg/L 17 kg/d	1.5 mg/L 26 kg/d	NA	NA	1/D	24HC
Ammonia as N (mg/L) Nov - March	3	6.7 mg/L	8.1 mg/L	NA	NA	1/D	24HC
E. coli (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/D	Grab
TKN	3, 5	NL mg/L	NA	NA	NA	1/W	24HC
Nitrate+Nitrite, as N	3, 5	NL mg/L	NA	NA	NA	1/W	24HC
Total Nitrogen [a.]	3, 5	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date [b.]	3, 5	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year [b.]	3, 5	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	6	0.18 mg/L 6.9 lb/day	0.27 mg/L 10 lb/day	NA	NA	1/D	24HC
Chronic Toxicity – *C. Dubia* (TU_c)		NA	NA	NA	NL	1/YR	24HC
Chronic Toxicity – *P. promelas* (TU_c)		NA	NA	NA	NL	1/YR	24HC

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. 9 VAC 25-40 (Nutrient Regulation)
6. Potomac Embayment Standards
7. Stream Model

MGD = Million gallons per day.
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24HC = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected Where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

20. Other Permit Requirements :

a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.
9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9 VAC 25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

b) Permit Section Part I.C., details the requirements for Toxics Management Program.
The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC, and receiving stream characteristics.

Dale Service Section 8 had some historical failures and was required to submit a Toxics Reduction Evaluation Plan. Ammonia was identified as the parameter causing the toxicity, and the scheduled completion in October 2002 of the plant upgrade would eliminate the toxicity. Confirmatory tests were performed on 24-hour flow-proportional composite samples of the nitrified effluent. The confirmatory tests included 4 chronic toxicity tests for each of the two test species, *C. dubia* and *P. promelas*. The review concluded that the effluent from Outfall 001 was no longer toxic and a Whole Effluent Toxicity (WET) limit was not necessary.

The proposed permit includes TMP language that requires Dale Service Section 8 to perform annual chronic toxicity testing for the duration of the permit. Results shall be reported on the DMR.

c) Permit Section Part I.E.2., details the requirements for the regulation of users.
The VPDES Permit Regulation at 9 VAC 25-31-280.B.9 requires that the Board provide an explanation on the regulation of users (i.e., industrial, indirect dischargers) to treatment works not owned by a state or a municipality. If there are no industrial users, include the following statement, "There are no industrial users contributing to the treatment works." If there are industrial users, describe how they are addressed in the permit.

An Industrial Users Survey was conducted in September 2007 and was submitted as part of the application package. No Significant Industrial Users or Categorical Industries were identified as part of the survey. The facility shall continue to perform the survey during the next permit term to insure there are no new regulated industries.

d) Permit Section Part I.D. details requirements of the Sewage Sludge Management Plan, Sludge Monitoring and Additional Reporting Requirements.

1. Regulations:

The VPDES Permit Regulation (VAC 25-31-10 et seq.), has incorporated technical standards for the use or disposal of sewage sludge, specifically land application and surface disposal, promulgated under 40 CFR Part 503.

The Permit Regulation (9 VAC 25-31-420) also establishes the standards for the use or disposal of sewage sludge. This part establishes standards that consist of general requirements, pollutant limits, management practices, and operational standards for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in the treatment works.

2. Evaluations:
Sludge Classification:

The Dale Service Section 8 STP is considered as Class I sludge management facility. The permit regulation (9 VAC 25-31-500) defines a Class I sludge management facility as any POTW which is required to have an approved pretreatment program defined under Part VII of the VPDES Permit Regulation (9 VAC 25-31-730 to 900) and/or any treatment works treating domestic sewage sludge that has been classified as a Class I facility by the Board because of the potential for its sewage sludge use or disposal practice to adversely affect public health and the environment.

Sludge Pollutant Concentration:
The average pollutant concentrations from sewage sludge analyses provided as part of the Dale Service Section 8 STP application for the permit reissuance are presented in Table 4. The analysis results are from samples collected during the period from January 2005 through December 2007.

Table 4 – Dale Service Section 8 STP Results

Pollutant	Average Concentration (mg/kg dry weight)	Sample Type
Arsenic	2.5	Composite
Cadmium	1.8	Composite
Copper	150	Composite
Lead	8.8	Composite
Mercury	0.80	Composite
Molybdenum	3.6	Composite
Nickel	15	Composite
Selenium	4.7	Composite
Zinc	820	Composite

All sewage sludge applied to the land must meet the ceiling concentration for pollutants, listed in Table 5. Sewage sludge applied to the land must also meet either pollutant concentration limits, cumulative pollutant loading rate limits, or annual pollutant loading rate limits, also listed in Table 5.

Cumulative pollutant loading limits or annual pollutant loading limits may be applied to sewage sludge exceeding pollutant concentration limits but meeting the ceiling concentrations, depending upon the levels of treatment achieved and the form (bulk or bag) of sludge applied. It should be noted that ceiling concentration limits are instantaneous values and pollutant concentration limits are monthly average values. Calculations of cumulative pollutant loading should be based on the monthly average values and the annual whole sludge application rate.

Table 5- SEWAGE SLUDGE POLLUTANT LIMITS

Pollutant	Ceiling Concentration Limits for All Sewage Sludge Applied to Land (mg/kg)*	Pollutant Concentration Limits for EQ and PC Sewage Sludge (mg/kg)*	Cumulative Pollutant Loading Rate Limits for CPLR Sewage Sludge (kg/hectare)	Annual Pollutant Rate Limits for APLR Sewage Sludge (kg/hectare/356 day period)**
Arsenic	75	41	41	2.0
Cadmium	85	39	39	1.9
Copper	4,300	1,500	1,500	75
Lead	840	300	300	15
Mercury	57	17	17	0.85
Molybdenum	75	---	---	---
Nickel	420	420	420	21
Selenium	100	100	100	5.0
Zinc	7,500	2,800	2,800	140
Applies to:	All sewage sludge that is land applied	Bulk sewage sludge and bagged sewage sludge	Bulk sewage sludge	Bagged sewage
From VPDES Permit Reg. Part VI	Table 1, 9 VAC 25-31-540	Table 3, 9 VAC 25-31-540	Table 2, 9 VAC 25-31-540	Table 4, 9 VAC 25-31-540

*Dry-weight basis
**Bagged sewage sludge is sold or given away in a bag or other container.

Comparing data from Table 4 with Table 5 shows that metal concentrations are significantly below the ceiling and PC concentration requirements.

3. Options for Meeting Land Application:

There are four equally safe options for meeting land application requirements. The options include the Exceptional Quality (EQ) option, the Pollutant Concentration (PC) option, the Cumulative Pollutant Loading Rate (CPLR) option, and the Annual Pollutant Loading Rate (APLR) option.

Pollutant Concentration (PC) is the type of sludge that may only be applied in bulk and is subject to general requirements and management practices; however, tracking of pollutant loadings to the land is not required. The sludge from the Dale Service Section 8 STP is considered Pollutant Concentration (PC) sewage sludge for the following reasons:

a) The bulk sewage sludge from the Dale Service Section 8 STP meets the PC limits in Table 1 of VPDES Permit Regulation Part VI, 9 VAC 25-31-540.

b) The VPDES Permit Regulation, Part VI, Subpart D, (9 VAC 25-31-690 through 720) establishes the requirements for pathogen reduction in sewage sludge. The Dale Service Section Eight WWTP is considered to produce a Class B sludge in accordance with the regulation (9 VAC 25-31-710.B.2. - Class B -Alternative 2. Alternative 2 defines Class B sludge as "Sewage sludge that is used or disposed that has been treated in a process that is equivalent to a Process to Significantly Reduce Pathogens (PSRP), as described in (9 VAC 25-31-710.D.). The Dale Service Section 8 WWTP treats sludge using an aerobic digestion process to reduce pathogens in accordance with the requirements of (9 VAC 25-31-710.D.3.).

c) The VPDES Permit Regulation, Part VI, Subpart D, (9 VAC 25-31-690 through 720) also establishes the requirements for Vector Attraction Reduction in sewage sludge. Based on the information supplied with the VPDES Sludge Application, the Dale Service Section 8 WWTP meets the requirements for Vector Attraction Reduction as defined by (9 VAC 25-31-720.B.1): the mass of volatile solids in the

sewage sludge is reduced by a minimum of 38 percent, calculated according to the method in 9 VAC 25-31-490.B.8.

4. Parameters to be Monitored:

In order to assure the sludge quality, the following parameters require monitoring: Arsenic, Cadmium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc.

In order to ensure that proper nutrient management and pH management practices are employed, the following parameters are required: pH, Total Kjeldahl Nitrogen, Ammonia Nitrogen, Nitrate Nitrogen, Total Phosphorus, Total Potassium, and Alkalinity (lime treated sludge should be analyzed for percent calcium carbonate equivalence). The nutrient and pH monitoring requirements apply only if the permittee land applies their own sludge. Since Dale Service Section 8 STP has contracted the land application responsibilities to Crops, Inc., of King George, Virginia, they are not required to monitor for nutrients, pH, Total Potassium and Alkalinity.

Soil monitoring in conjunction with soil productivity information is critical, especially for frequent applications, to making sound sludge application decisions from both an environmental and an agronomic standpoint. Since Dale Service Section 8 STP has contracted the land application responsibilities to Crops, Inc, of King George, Virginia, they are not required to perform soil monitoring.

5. Monitoring Frequency:

The monitoring frequency is based on the amount of sewage sludge applied in a given 365-day period. The permit application indicates that the total dry metric tons of sewage sludge generated at Dale Service Section 8 STP are 516 dry metric tons per 365-day period. This reissuance proposes a monitoring frequency of 1/quarter as recommended.

Dale Service Section 8 STP is required to provide the results of all monitoring performed in accordance with Part I.A., and information on management practices and appropriate certifications no later than February 19th of each year (as required by the 503 regulations) to the Northern Regional Office of the Department of Environmental Quality. Each report must document the previous calendar year's activities.

6. Sampling:

Representative sampling is an important aspect of monitoring. Because the pollutant limits pertain to the quality of the final sewage sludge applied to the land, samples must be collected after the last treatment process prior to land application. Composite samples shall be required for all samplings from this facility.

7. Sludge Management Plan (SMP):

The SMP is required to be part of the VPDES permit application. The VPDES Sewage Sludge Permit Application Form and its attachments will constitute the applicant's SMP. Any proposed sewage treatment works treating domestic sewage must submit a SMP with the appropriate VPDES permit application forms at least 180 days prior to the date proposed for commencing operations. The permittee shall conduct all sewage sludge use or disposal activities in accordance with the SMP approved with the issuance of this permit. Any proposed changes in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and submitted for Virginia Department of Environmental Quality review and approval no less than 90 days prior to the effective date of the changes.

Upon approval, the SMP becomes an enforceable part of the permit. The permit may be modified or alternatively revoked and reissued to incorporate limitations/conditions necessitated by substantial changes in sewage sludge use or disposal practices.

Dale Service Section 8 STP has submitted the VPDES Sewage Sludge Permit Application Form and its attachments. Their SMP dated December 18, 2007 is on file at the Northern Regional Office of the Department of Environmental Quality.

8. Reporting Requirements:

The reporting requirements are for POTWs with a design flow rate equal to or greater than 1 MGD (majors), POTWs that serve a population of 10,000 or greater, and Class I sludge management facilities. A permit special condition, which requires these generators to submit an annual report on February 19th of each year, is included. The Dale Service Section 8 STP shall use the Discharge Monitoring Report (DMR) forms as part of the annual report. A sample form (SP1 and S01) with proper DMR parameter codes and its instructions are provided. In addition to the DMR forms, the generators who land apply sewage sludge are responsible for submitting the additional information required by 9 VAC 25-31-590, *i.e.*, appropriate certification statements, descriptions of how pathogen and vector attraction reduction requirements are met, descriptions of how the management practices (if applicable) are being met, and descriptions of how site restrictions (if applicable) are being met.

9. Records Keeping:

This special condition outlines record retention requirements for sludge meeting Class B pathogen reduction and vector attraction reduction alternative 1-10. Table 6 presents the record keeping requirements.

Table 6: Record Keeping for PC Sludge

1	Pollutant concentrations of each pollutant in Part I.A.3. of the permit;
2	Description of how the pathogen reduction requirement in Part I.A.3. of the permit are met;
3	Description of how the vector attraction requirements in Part I.A.3. of the permit are met;
4	Description of how the management practice specified in the approved Sludge Management Plan and/or the permit are met;
5	Description of how the site restriction specified in the Sludge Management Plan and/or the permit are met;
6	Certification statement in Part I.D.3.b.2.f. of the permit.

21. Other Special Conditions (Part I.E.):

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.2. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9 VAC 25-31-280 B.9 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works. Dale Service Section 8 performed an Indirect Dischargers survey during the current permit cycle and determined that there were no Significant Indirect Dischargers. The reissued permit shall require that the survey be performed again to determine if there have been any changes since the last survey. The next survey shall be due with the application for permit reissuance.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Within 90 days of the effective date of this permit, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual a statement confirming the accuracy and completeness of the current O&M Manual to the DEQ-NRO. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 D, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. This facility requires a Class I operator.

f) Reliability Class. The Sewage Collection and Treatment Regulation at 9 VAC 25-790 requires sewerage works achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. The facility is required to meet a reliability Class of I.

g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.

h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

i) Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works. This special condition is found in Part I.D of the permit.

j) Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage. This special condition is found in Part I.D of the permit.

k) E3/E4. 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

l) Nutrient Reopener. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

m) PCB Monitoring. This special condition shall require the permittee to monitor and report PCB concentrations in dry weather and wet weather effluent samples. The results from this monitoring shall be used to implement the PCB TMDL that was developed for the Potomac River and approved by EPA in October 2007. This facility was given a WLA in the TMDL.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
   1) The NEW-13 special standard designation was removed.
   2) The Final Effluent Monitoring Alternative was removed.

3) The facility requested that the Water Quality Criteria monitoring special condition be included in the permit.
4) A special condition for PCB monitoring was included due to the approval of the Potomac River TMDL for PCBs.

b) Monitoring and Effluent Limitations:
1) All monthly, year to date, and annual nutrient loadings were removed from this permit since they are governed by the Nutrient General Permit.
2) Nitrate+ Nitrite monitoring was included in lieu of individual analyses for each parameter.
3) All loadings were rounded to two significant figures based on current agency guidance.
4) Total Phosphorus monthly loadings were recalculated as lb/day instead of kg/day.
5) An annual average TN concentration of 3.0 mg/L was included at the 4.6 MGD tier.

24. Variances/Alternate Limits or Conditions:

The Dale Service Corporation requested a waiver from two of the three priority pollutant scans required by Form 2A. The request was submitted in writing to DEQ-NRO on April 26, 2007. The request was forwarded to EPA on May 23, 2007 for concurrence. Thirty days past with no comment, so Dale Service submitted one scan as part of the application.

25. Public Notice Information:

First Public Notice Date: 8/14/08 Second Public Notice Date: 8/21/08

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3834, althompson@deq.virginia.gov. See Attachment 7 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

Fecal coliform monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. Sufficient exceedances of the instantaneous fecal coliform bacteria criterion (5 of 17 samples - 29.4%) were recorded at DEQ's ambient water quality monitoring station (1aNEA002.89) at the Route 1 bridge to assess this stream segment as not supporting of the recreation use goal for the 2006 water quality assessment. The aquatic life and wildlife uses are considered fully supporting. Citizen monitoring finds a high probability of adverse conditions for biota, noted by an observed effect for the aquatic life use. The fish consumption use was not assessed. The receiving stream is on the current 303(d) list for an impairment of bacteria. A TMDL has been drafted for the free-flowing portion of Neabsco Creek and was submitted to EPA in January 2008 for approval.

There is a downstream impairment for the Potomac River and its tidal tributaries, including tidal Neabsco Creek, for PCBs in fish tissue. The TMDL did not include the receiving stream, as it was not listed for a PCB in fish tissue impairment; however, upstream facilities were included in the TMDL if they were considered significant sources. The Dale Service facilities were identified as significant sources and provided WLAs in the TMDL.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action:

Dale Service Section 8 operated under a Consent Special Order (CSO), effective April 1, 2002 that provided interim limits for ammonia, TSS, and $cBOD_5$. The CSO required Dale Service to complete the upgrade of the treatment works and achieve compliance with the final Permit limits for ammonia, TSS, and $cBOD_5$ demand by October 1, 2002. The CSO was cancelled and the final permit limits are now effective. There have been no recent enforcement actions for this facility.

Public Comment: No comments were received from the public during the public notice.

EPA Checklist: The checklist can be found in Attachment 8.

Staff Comments: see below

Stormwater Management: 9 VAC 25-31-10 defines Storm Water discharge associated with industrial activity and identifies eleven categories of facilities subject to regulatory requirements for point source discharges of stormwater. 9 VAC 25-31-120 B outlines the requirements for the operator of a storm water discharge associated with industrial activity. Dale Service Section 8 falls under the category of "treatment works treating domestic sewage….with a design flow of 1.0 mgd or more…" The facility is currently permitted by a DCR construction stormwater permit because of the construction work. Once construction is complete, the permittee shall apply for a VPDES General Stormwater Industrial Permit.

Development of the Policy for the Potomac River Embayments (9 VAC 25-415-10):

The State Water Control Board adopted the Potomac Embayment Standards (PES) in 1971 to address serious nutrient enrichment problems evident in the Virginia embayments and Potomac River at the time. These standards applied to sewage treatment plants discharging into Potomac River embayments in Virginia and for expansions of existing plants discharging into the non-tidal tributaries of these embayments. The standards were actually effluent limitations for BOD, unoxidized nitrogen, total phosphorus, and total nitrogen:

Parameter	PES Standard (monthly average)
BOD_5	3 mg/L
Unoxidized Nitrogen	1 mg/L (April – October)
Total Phosphorus	0.2 mg/L
Total Nitrogen	1 mg/L (when technology is available)

Based upon these standards, several hundred million dollars were spent during the 1970s and 1980s upgrading major treatment plants in the City of Alexandria and the Counties of Arlington, Fairfax, Prince William, and Stafford. Today, these localities operate advanced wastewater treatment plants which have contributed a great deal to the dramatic improvement in the water quality of the upper Potomac estuary.

Before the planned upgrades at these facilities were completed, and the fact that water quality improved, questions arose over the high capital and operating costs that would result from meeting all of the requirements contained in the PES. Questions also arose due to the fact that the PES were blanket effluent limitations that applied equally to different bodies of water. Therefore, in 1978, the State Water Control Board committed to reevaluate the PES. In 1984, a major milestone was reached when the Virginia Institute of Marine Science (VIMS) completed state-of-the-art models for each of the embayments. The Board then selected the Northern Virginia Planning District Commission (NVPDC) to conduct wasteload allocation studies of the Virginia embayments using the VIMS models. In 1988, these studies were completed and effluent limits that would protect the embayments and the mainstem of the Potomac River were developed for each major facility.

Since the PES had not been amended or repealed, VPDES permits had included the PES standards as effluent limits. Since the plants could not meet all of the requirements of the PES, the plant owners operated under consent orders or consent decrees with operating effluent limits for the treatment plants that were agreed upon by the owners and the Board.

In 1991 and 1992, several Northern Virginia jurisdictions with embayment treatment plants submitted a petition to the Board requesting that the Board address the results of the VIMS/NVPDC studies. Their petition requested revised effluent limitations and a defined modeling process for determining effluent limitations.

The recommendations in the petition were designed to protect the extra sensitive nature of the embayments along with the Potomac River which have become a popular recreational resource during recent years. The petition included requirements more stringent than would be applied using the results of the modeling/allocation work conducted in the 1980s. With the inherent uncertainty of modeling, the petitioners question whether the results of modeling would provide sufficient protection for the embayments. By this petition, the local governments asked for continued special protection for the embayments based upon a management approach that uses stringent effluent limits. They believe this approach has proven successful over the past two decades. In addition the petition included a modeling process that will be used to determine if more stringent limits are needed in the future due to increased wastewater discharges.

The State Water Control Board adopted the petition, with revisions, as a regulation on September 12, 1996. The regulation is entitled *Policy for the Potomac River Embayments* (9 VAC25-415-10). On the same date, the Board repealed the old PES. The new regulation became effective on April 3, 1997, and contains the following effluent limits:

Parameter	PES Standard (monthly average)
$cBOD_5$	5 mg/L
TSS	6 mg/L
Total Phosphorus	0.18 mg/L
Ammonia as Nitrogen	1 mg/L (April - October)

9 VAC 25-415-50 Water Quality Monitoring. The Policy says "that water quality models may be required to predict the effects of wastewater discharges on the water quality of the receiving waterbody, the embayment, and the Potomac River. The purpose of the modeling shall be to determine if more stringent limits than those required by 9 VAC 25-415-40 (the Policy's effluent limitations) are required to meet water quality standards."

Attachments to the Fact Sheet for Dale Service Section Eight – VA0024678

Attachment 1 - Flow Frequency Determination

Attachment 2 - Topographic Map

Attachment 3 - Water Quality Criteria and WLA Calculations

Attachment 4 - Mixing Zone Predictions

Attachment 5 - STATS limit derivation printouts

Attachment 6 - Modeling Results and Summary

Attachment 7 - Public Notice

Attachment 8 - EPA Checklist

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Dale Service Corp. Section 1 - VA#0024724
Dale Service Corp. Section 8 - VA#0024678

TO: James Olson, NRO

FROM: Paul Herman, WQAP

DATE: December 11, 1996

COPIES: Ron Gregory, Charles Martin, File

The Dale Service Corp. Section 1 STP discharges to an unnamed tributary to Neabsco Creek and the Section 8 STP discharges to Neabsco Creek. Both outfalls are in Dale City, VA. Stream flow frequencies are required at this sites for use by the permit writer in developing effluent limitations for the VPDES permits.

The USGS operates a continuous record gage on the South Fork Quantico Creek near Independent Hill, VA (#01658500) since 1951. The gage is located at the Route 619 bridge in Prince William County, VA. The flow frequencies for the gage and the discharge points are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

S.F. Quantico Creek near Independent Hill, VA (#01658500):

Drainage Area = 7.64 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 0.42 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 0.57 cfs
30Q5 = 0.035 cfs	HM = 0.0 cfs

Section 1:

UT to Neabsco Creek at discharge point:

Drainage Area = 0.92 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 0.051 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 0.069 cfs
30Q5 = 0.004 cfs	HM = 0.0 cfs

Section 8:

Neabsco Creek at discharge point:

Drainage Area = 6.11 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 0.34 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 0.46 cfs
30Q5 = 0.028 cfs	HM = 0.0 cfs

The drainage area of Neabsco Creek at the head of the tidal reach is 19.87 mi^2 and at the RF&P railroad bridge near the mouth the drainage area is 22.21 mi^2.

The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination - Revised 7/25/97 memo
Dale Service Corp. Section 1 - VA#0024724
Dale Service Corp. Section 8 - VA#0024678

TO: James Olson, NRO

FROM: Paul Herman, WQAP

DATE: December 20, 1996

COPIES: Ron Gregory, Charles Martin, File

The Dale Service Corp. Section 1 STP discharges to an unnamed tributary to Neabsco Creek and the Section 8 STP discharges to Neabsco Creek. Both outfalls are in Dale City, VA. The Policy for the Potomac Embayments apply to both facilities thereby requiring special flow frequency analyses to determine the 1Q10 and 7Q10 during the winter months (November - March) defined by the Standard. The 1Q10 and 7Q10 flow frequencies for the summer months (April - October) are based on the analysis of data available for the period of record at the selected reference gaging station.

The seasonal, temperature based, flow frequencies have been determined for the reference gage used in this analysis; the South Fork Quantico Creek near Independent Hill, VA (#01658500). The gage is located at the Route 619 bridge in Prince William County, VA and has been in operation since 1951. The flow frequencies for the gage and the discharge points are presented below. The values at each discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

S.F. Quantico Creek near Independent Hill, VA (#01658500):

Drainage Area = 7.64 mi^2

April - October:	1Q10 = 0.0 cfs	7Q10 = 0.0 cfs
November - March:	1Q10 = 0.17 cfs	7Q10 = 0.30 cfs

Section 1:

UT to Neabsco Creek at discharge point:

Drainage Area = 0.92 mi^2

April - October:	1Q10 = 0.0 cfs	7Q10 = 0.0 cfs
November - March:	1Q10 = 0.020 cfs	7Q10 = 0.036 cfs

Section 8:

Neabsco Creek at discharge point:

Drainage Area = 6.11 mi^2

April - October:	1Q10 = 0.0 cfs	7Q10 = 0.0 cfs
November - March:	1Q10 = 0.14 cfs	7Q10 = 0.24 cfs

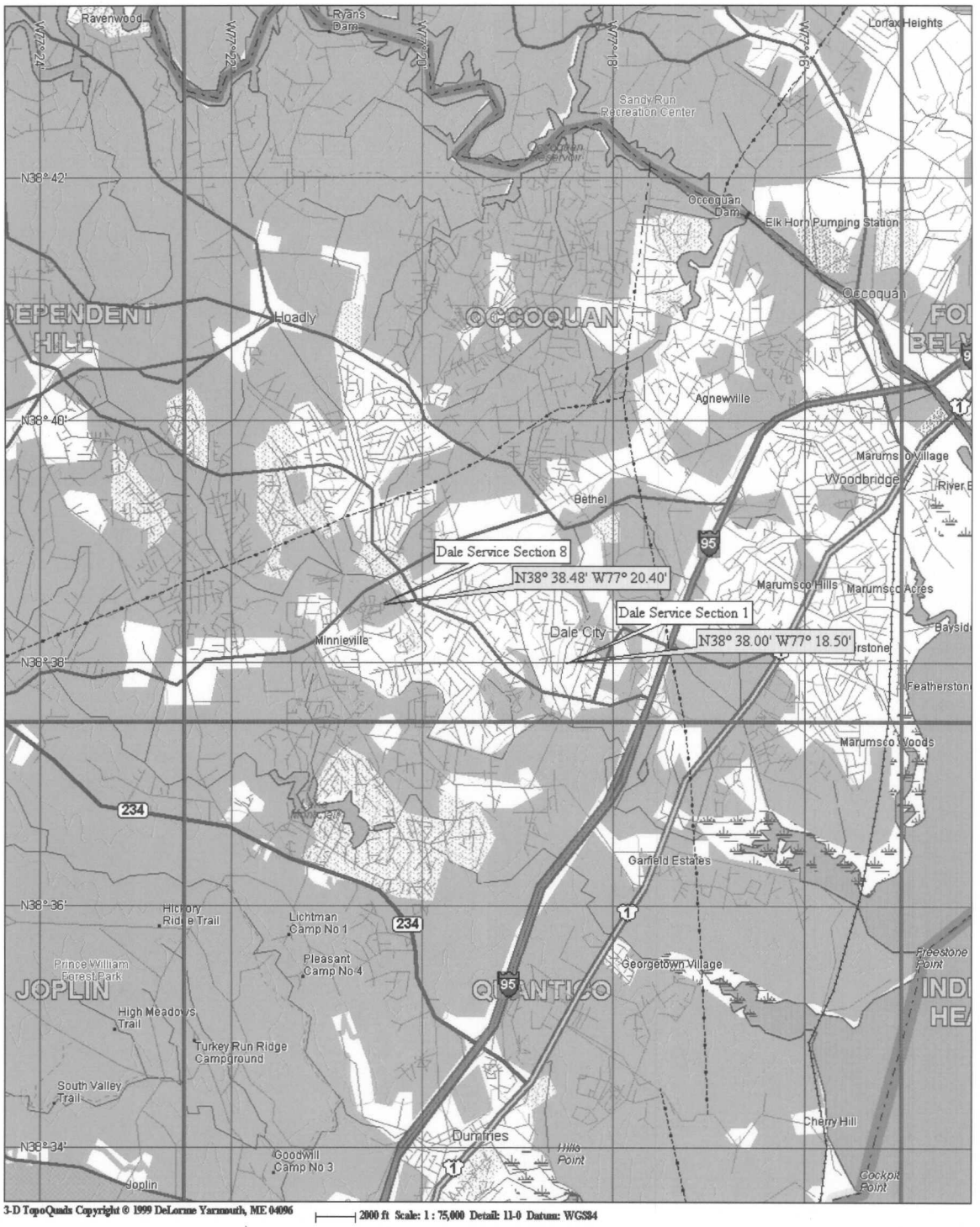
Be advised, the seasonal tiering defined in the Policy for Potomac Embayments is not based on stream flow. Rather, the tiers are temperature based. Procedures for establishing flows during the months included in a temperture tier are not addressed in Section III-A pages 12-17 of the "Virginia Water Control Board VPDES Technical Reference Manual".

If you have any questions concerning this analysis, please let me know.

* Conversion Factor 0.6463 is used to convert cfs to MGD.

Nov-Mar 1Q10 = 0.14 cfs x 0.6463 = 0.090482 MGD

Nov-Mar 7Q10 = 0.24 cfs x 0.6463 = 0.155112 MGD



2000 ft Scale: 1 : 75,000 Detail: 11-0 Datum: WGS84

Attachment 2

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dale Service Section 8 Permit No.: VA0024678

Receiving Stream: Neabsco Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0.016 MGD
1Q10 (Wet season) =	0.013 MGD
30Q10 (Wet season)	0.67 MGD
30Q5 =	0.004 MGD
Harmonic Mean =	0 MGD
Annual Average =	n/a MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	89 mg/L
90% Temp (Annual) =	26 deg C
90% Temp (Wet season) =	20 deg C
90% Maximum pH =	7.01 SU
10% Maximum pH =	SU
Discharge Flow =	4 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile[C]	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin [C]	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	3.58E+01	3.40E+00	na	--	3.6E+01	3.4E+00	na	--	--	--	--	--	--	--	--	--	3.6E+01	3.4E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	5.84E+01	5.99E+00	na	--	5.9E+01	7.0E+00	na	--	--	--	--	--	--	--	--	--	5.9E+01	7.0E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine[C]	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform [C]	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	3.4E+00	1.0E+00	na	--	3.4E+00	1.0E+00	na	--	--	--	--	--	--	--	--	--	3.4E+00	1.0E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Attachment 3

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	5.2E+02	6.7E+01	na	--	5.2E+02	6.7E+01	na	--	--	--	--	--	--	--	--	--	5.2E+02	6.7E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	1.2E+01	8.1E+00	na	--	1.2E+01	8.1E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	8.1E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD [C]	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE [C]	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine[C]	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene [C]	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene [C]	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane [C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.0E+02	1.2E+01	na	--	1.0E+02	1.2E+01	na	--	--	--	--	--	--	--	--	--	1.0E+02	1.2E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.7E+02	1.8E+01	na	4.6E+03	1.7E+02	1.8E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.7E+02	1.8E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine [C]	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine [C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine [C]	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total [C]	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	**7.7E-03**	**5.9E-03**	**na**	**8.2E+01**
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E+06**
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+04**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+01**
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+00**
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.0E+00**
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+04**
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**1.1E+04**
Silver	0	2.8E+00	--	na	--	2.8E+00	--	na	--	--	--	--	--	--	--	--	--	**2.8E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane [C]	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+02**
Tetrachloroethylene [C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.9E+01**
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.3E+00**
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+05**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**7.5E-03**
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**6.3E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.4E+02**
1,1,2-Trichloroethane [C]	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.2E+02**
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.5E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride [C]	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.1E+01**
Zinc	0	1.1E+02	1.1E+02	na	6.9E+04	1.1E+02	1.1E+02	na	6.9E+04	--	--	--	--	--	--	--	--	**1.1E+02**	**1.1E+02**	**na**	**6.9E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	6.2E-01
Chromium III	4.0E+01
Chromium VI	6.4E+00
Copper	4.8E+00
Iron	na
Lead	7.0E+00
Manganese	na
Mercury	5.1E-02
Nickel	1.1E+01
Selenium	3.0E+00
Silver	1.1E+00
Zinc	4.2E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dale Service Section 8 Permit No.: VA0024678

Receiving Stream: Neabsco Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0.016 MGD
1Q10 (Wet season) =	0.013 MGD
30Q10 (Wet season)	0.67 MGD
30Q5 =	0.004 MGD
Harmonic Mean =	0 MGD
Annual Average =	n/a MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	89 mg/L
90% Temp (Annual) =	26 deg C
90% Temp (Wet season) =	20 deg C
90% Maximum pH =	7.01 SU
10% Maximum pH =	SU
Discharge Flow =	4.6 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	**2.7E+03**
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	**7.8E+02**
Acrylonitrile[C]	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	**6.6E+00**
Aldrin [C]	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	**3.0E+00**	--	na	**1.4E-03**
Ammonia-N (mg/l) (Yearly)	0	3.58E+01	3.40E+00	na	--	3.6E+01	3.4E+00	na	--	--	--	--	--	--	--	--	--	**3.6E+01**	**3.4E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	5.84E+01	5.86E+00	na	--	5.9E+01	6.7E+00	na	--	--	--	--	--	--	--	--	--	**5.9E+01**	**6.7E+00**	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	**1.1E+05**
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	**4.3E+03**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	**7.1E+02**
Benzidine[C]	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	**5.4E-03**
Benzo (a) anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	**4.9E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	**4.9E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	**4.9E-01**
Benzo (a) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	**4.9E-01**
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	**1.4E+01**
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	**1.7E+05**
Bromoform [C]	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	**3.6E+03**
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	**5.2E+03**
Cadmium	0	3.4E+00	1.0E+00	na	--	3.4E+00	1.0E+00	na	--	--	--	--	--	--	--	--	--	**3.4E+00**	**1.0E+00**	na	--
Carbon Tetrachloride [C]	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	**4.4E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	na	**2.2E-02**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	**2.1E+04**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	5.2E+02	6.7E+01	na	--	5.2E+02	6.7E+01	na	--	--	--	--	--	--	--	--	--	5.2E+02	6.7E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	1.2E+01	8.1E+00	na	--	1.2E+01	8.1E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	8.1E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD [C]	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE [C]	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine[C]	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [c]	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide[c]	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene[c]	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene[c]	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane Alpha-BHC[c]	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane Beta-BHC[c]	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane Gamma-BHC[c] (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane[c]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [c]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[c]	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.0E+02	1.2E+01	na	--	1.0E+02	1.2E+01	na	--	--	--	--	--	--	--	--	--	1.0E+02	1.2E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.7E+02	1.8E+01	na	4.6E+03	1.7E+02	1.8E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.7E+02	1.8E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine[c]	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine[c]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine[c]	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total[c]	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	**7.7E-03**	**5.9E-03**	**na**	**8.2E+01**
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	**na**	**4.6E+06**
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	**na**	**1.1E+04**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	**na**	**--**
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	**na**	**1.5E+01**
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	**na**	**4.0E+00**
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	**na**	**8.0E+00**
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	**na**	**2.0E+04**
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**1.1E+04**
Silver	0	2.8E+00	--	na	--	2.8E+00	--	na	--	--	--	--	--	--	--	--	--	**2.8E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	**na**	**--**
1,1,2,2-Tetrachloroethane [C]	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	**na**	**1.1E+02**
Tetrachloroethylene [C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	**na**	**8.9E+01**
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	**na**	**6.3E+00**
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	**na**	**2.0E+05**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**7.5E-03**
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**6.3E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	**na**	**9.4E+02**
1,1,2-Trichloroethane [C]	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	**na**	**4.2E+02**
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	**na**	**8.1E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	**na**	**6.5E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	**na**	**--**
Vinyl Chloride [C]	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	**na**	**6.1E+01**
Zinc	0	1.1E+02	1.1E+02	na	6.9E+04	1.1E+02	1.1E+02	na	6.9E+04	--	--	--	--	--	--	--	--	**1.1E+02**	**1.1E+02**	**na**	**6.9E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	6.2E-01
Chromium III	4.0E+01
Chromium VI	6.4E+00
Copper	4.8E+00
Iron	na
Lead	7.0E+00
Manganese	na
Mercury	5.1E-02
Nickel	1.1E+01
Selenium	3.0E+00
Silver	1.1E+00
Zinc	4.2E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Mixing Zone Predictions for VA0024678

Effluent Flow = 4.0 MGD
Stream 7Q10 = .155112 MGD
Stream 30Q10 = .016 MGD
Stream 1Q10 = .0905 MGD
Stream slope = .333 ft/ft
Stream width = 15 ft
Bottom scale = 2
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1458 ft
Length = 1450.82 ft
Velocity = 2.94 ft/sec
Residence Time = .0057 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .1429 ft
Length = 1476.22 ft
Velocity = 2.9006 ft/sec
Residence Time = .0059 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1444 ft
Length = 1462.96 ft
Velocity = 2.9219 ft/sec
Residence Time = .1391 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Mixing Zone Predictions for VA0024678

Effluent Flow = 4.6 MGD
Stream 7Q10 = .155112 MGD
Stream 30Q10 = .016 MGD
Stream 1Q10 = .0905 MGD
Stream slope = .333 ft/ft
Stream width = 15 ft
Bottom scale = 2
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1582 ft
Length = 1353.9 ft
Velocity = 3.101 ft/sec
Residence Time = .0051 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .1554 ft
Length = 1374.88 ft
Velocity = 3.0649 ft/sec
Residence Time = .0052 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1569 ft
Length = 1363.46 ft
Velocity = 3.0842 ft/sec
Residence Time = .1228 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Nov - March

Facility = VA0024678 4.0 flow tier
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 12.3
WLAc = 2.15
Q.L. = .2
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.33799070084507
Average Weekly limit = 2.58763351565062
Average Monthly LImit = 2.15

The data are:

9

Facility = VA0024678 4.0 Flow tier
Chemical = Ammonia as Nitrogen April - Oct
Chronic averaging period = 30
WLAa = 11.93
WLAc = 2.05
Q.L. = .2
# samples/mo. = 28
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.13622369150344
Average Weekly limit = 2.52602161713963
Average Monthly LImit = 2.06229287227906

The data are:

9

1/11/2006 1:51:39 PM

Facility = Dale Service Section 8 4.6 Flow for
Chemical = Ammonia as N (April - October)
Chronic averaging period = 30
WLAa = 20
WLAc = 3.4
Q.L. = .2
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 6.86007831761546
Average Weekly limit = 4.09207160614517
Average Monthly LImit = 3.4

The data are:

9

1/11/2006 1:52:07 PM

Facility = Dale Service Section 8 4.6 flow hier
Chemical = Ammonia as N (Nov-March)
Chronic averaging period = 30
WLAa = 59
WLAc = 6.7
Q.L. = .2
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 13.5183896258893
Average Weekly limit = 8.06378816505078
Average Monthly LImit = 6.7

The data are:

9

5/23/2008 7:43:51 AM

Facility = VA0024678
Chemical = Zinc
Chronic averaging period = 4
WLAa = 110
WLAc = 110
Q.L. = 10
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 39.4
Variance = 558.849
C.V. = 0.6
97th percentile daily values = 95.8766
97th percentile 4 day average = 65.5533
97th percentile 30 day average= 47.5184
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

39.4

5/23/2008 7:48:34 AM

Facility = VA0024678
Chemical = Copper
Chronic averaging period = 4
WLAa = 12
WLAc = 8.1
Q.L. = 1.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 1.19
Variance = .509796
C.V. = 0.6
97th percentile daily values = 2.89576
97th percentile 4 day average = 1.97991
97th percentile 30 day average= 1.43520
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

1.19

The regional stream model was run for two design flow scenarios.

Model Run #1 was run with the interim design flow of 2.95 MGD and the interim permit limits established by the Consent Special Order (Attachment 2).

The TKN value for this run was derived by using the average of the effluent ammonia as nitrogen monitoring values and making the assumption that TKN is equal to two times the ammonia value. Attachment 16 is a summary of facility's effluent ammonia as nitrogen monitoring data, from January 1992 through November 1997 and shows that the average concentration value is 6.0 mg/l.

The Temperature value used, is the calculated 90th percentile value for the summer PPRE months of April through October.

Model Run #2 was run using the ultimate design flow of 4.0 MGD and the final PPRE effluent limits for the summer months April through October. The TKN value used for the model was derived by making the assumption that the TKN is equal to twice the ammonia as nitrogen value. The PPRE ammonia as nitrogen limit is 1.0 mg/l.

Both runs assume the 7Q10 stream flow is 0.00 MGD or worse case conditions.

****

REGIONAL MODELING SYSTEM VERSION 3.2

****

MODEL SIMULATION FOR THE DALE CITY SECTION 8 STP DISCHARGE

TO NEABSCO CREEK

COMMENT: Model Run # 1

THE SIMULATION STARTS AT THE DALE CITY SECTION 8 STP DISCHARGE

********** PROPOSED PERMIT LIMITS **********

FLOW = 2.95 MGD cBOD5 = 8 Mg/L TKN = 12 Mg/L D.O. = 6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS 1 SEGMENT LONG
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.00000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.351 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. ½C	DO-SAT Mg/L
1	4.20	0.738	17.143	0.700	0.250	0.000	120.00	26.00	8.168

(The K Rates shown are at 20½C ... the model corrects them for temperature.)

********** RESPONSE FOR SEGMENT 1 **********

TOTAL STREAMFLOW = 2.9500 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	6.000	20.000	38.970
0.100	0.100	6.069	19.848	38.842
0.200	0.200	6.129	19.697	38.715
0.300	0.300	6.182	19.547	38.588
0.400	0.400	6.228	19.398	38.461
0.500	0.500	6.268	19.251	38.335
0.600	0.600	6.304	19.104	38.209
0.700	0.700	6.336	18.959	38.084
0.800	0.800	6.364	18.815	37.959
0.900	0.900	6.390	18.672	37.835
1.000	1.000	6.413	18.530	37.711
1.100	1.100	6.434	18.389	37.587
1.200	1.200	6.453	18.249	37.464
1.300	1.300	6.470	18.110	37.341
1.400	1.400	6.487	17.972	37.218
1.500	1.500	6.502	17.836	37.096
1.600	1.600	6.516	17.700	36.974
1.700	1.700	6.529	17.566	36.853
1.800	1.800	6.542	17.432	36.732
1.900	1.900	6.554	17.299	36.612
2.000	2.000	6.566	17.168	36.492
2.100	2.100	6.577	17.037	36.372
2.200	2.200	6.587	16.907	36.253
2.300	2.300	6.598	16.779	36.134
2.400	2.400	6.608	16.651	36.015
2.500	2.500	6.617	16.525	35.897
2.600	2.600	6.627	16.399	35.779
2.700	2.700	6.636	16.274	35.662
2.800	2.800	6.646	16.150	35.545
2.900	2.900	6.655	16.028	35.429
3.000	3.000	6.663	15.906	35.312
3.100	3.100	6.672	15.785	35.196
3.200	3.200	6.681	15.665	35.081
3.300	3.300	6.689	15.545	34.966
3.400	3.400	6.698	15.427	34.851
3.500	3.500	6.706	15.310	34.737
3.600	3.600	6.714	15.193	34.623
3.700	3.700	6.722	15.078	34.510
3.800	3.800	6.730	14.963	34.396
3.900	3.900	6.738	14.849	34.284
4.000	4.000	6.746	14.736	34.171
4.100	4.100	6.754	14.624	34.059
4.200	4.200	6.762	14.513	33.947

****

REGIONAL MODELING SYSTEM VERSION 3.2

DATA FILE SUMMARY

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THE NAME OF THE DATA FILE IS: DALE8-4.MOD

THE STREAM NAME IS: NEABSCO CREEK
THE RIVER BASIN IS: POTOMAC RIVER
THE SECTION NUMBER IS: 07
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: DALE CITY SECTION 8 STP

PROPOSED LIMITS ARE:
FLOW = 2.95 MGD
BOD5 = 8 MG/L
TKN = 12 MG/L
D.O. = 6 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 1

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON
THE GAUGE NAME IS: QUANTICO CREEK
GAUGE DRAINAGE AREA = 7.64 SQ.MI.
GAUGE 7Q10 = 0 MGD
DRAINAGE AREA AT DISCHARGE = 6.11 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = N
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 26 ½C

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 4.2 MI

SEGMENT WIDTH = 15 FT
SEGMENT DEPTH = .5 FT
SEGMENT VELOCITY = .85 FT/SEC

DRAINAGE AREA AT SEGMENT START = 6.11 SQ.MI.
DRAINAGE AREA AT SEGMENT END = 13.29 SQ.MI.

ELEVATION AT UPSTREAM END = 180 FT
ELEVATION AT DOWNSTREAM END = 60 FT

Slope = .333

THE CROSS SECTION IS: WIDE SHALLOW ARC
THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y
THE SEGMENT LENGTH IS 60 % POOLS
POOL DEPTH = .7 FT
THE SEGMENT LENGTH IS 40 % RIFFLES
RIFFLE DEPTH = .3 FT

THE BOTTOM TYPE = GRAVEL
SLUDGE DEPOSITS = NONE
AQUATIC PLANTS = NONE
ALGAE OBSERVED = NONE
WATER COLORED GREEN (Y/N) = N

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REGIONAL MODELING SYSTEM VERSION 3.2

****

MODEL SIMULATION FOR THE DALE CITY SECTION 8 STP DISCHARGE

TO NEABSCO CREEK

COMMENT: Model Run #2

THE SIMULATION STARTS AT THE DALE CITY SECTION 8 STP DISCHARGE

********** PROPOSED PERMIT LIMITS **********

FLOW = 4 MGD cBOD5 = 5 Mg/L TKN = 2 Mg/L D.O. = 6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS 1 SEGMENT LONG
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.00000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.351 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. ½C	DO-SAT Mg/L
1	4.20	0.738	17.143	0.500	0.100	0.000	120.00	26.00	8.168

(The K Rates shown are at 20½C ... the model corrects them for temperature.)

********** RESPONSE FOR SEGMENT 1 **********

TOTAL STREAMFLOW = 4.0000 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	6.000	12.500	0.000
0.100	0.100	6.265	12.432	0.000
0.200	0.200	6.490	12.364	0.000
0.300	0.300	6.681	12.297	0.000
0.400	0.400	6.844	12.230	0.000
0.500	0.500	6.982	12.164	0.000
0.600	0.600	7.100	12.098	0.000
0.700	0.700	7.201	12.032	0.000
0.800	0.800	7.286	11.966	0.000
0.900	0.900	7.351	11.901	0.000
1.000	1.000	7.351	11.837	0.000
1.100	1.100	7.351	11.772	0.000
1.200	1.200	7.351	11.708	0.000
1.300	1.300	7.351	11.644	0.000
1.400	1.400	7.351	11.581	0.000
1.500	1.500	7.351	11.518	0.000
1.600	1.600	7.351	11.456	0.000
1.700	1.700	7.351	11.393	0.000
1.800	1.800	7.351	11.331	0.000
1.900	1.900	7.351	11.270	0.000
2.000	2.000	7.351	11.208	0.000
2.100	2.100	7.351	11.147	0.000
2.200	2.200	7.351	11.087	0.000
2.300	2.300	7.351	11.026	0.000
2.400	2.400	7.351	10.967	0.000
2.500	2.500	7.351	10.907	0.000
2.600	2.600	7.351	10.848	0.000
2.700	2.700	7.351	10.789	0.000
2.800	2.800	7.351	10.730	0.000
2.900	2.900	7.351	10.672	0.000
3.000	3.000	7.351	10.613	0.000
3.100	3.100	7.351	10.556	0.000
3.200	3.200	7.351	10.498	0.000
3.300	3.300	7.351	10.441	0.000
3.400	3.400	7.351	10.384	0.000
3.500	3.500	7.351	10.328	0.000
3.600	3.600	7.351	10.272	0.000
3.700	3.700	7.351	10.216	0.000
3.800	3.800	7.351	10.160	0.000
3.900	3.900	7.351	10.105	0.000
4.000	4.000	7.351	10.050	0.000
4.100	4.100	7.351	9.995	0.000
4.200	4.200	7.351	9.941	0.000

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 4.2 MI

SEGMENT WIDTH = 15 FT
SEGMENT DEPTH = .5 FT
SEGMENT VELOCITY = .85 FT/SEC

DRAINAGE AREA AT SEGMENT START = 6.11 SQ.MI.
DRAINAGE AREA AT SEGMENT END = 13.29 SQ.MI.

ELEVATION AT UPSTREAM END = 180 FT
ELEVATION AT DOWNSTREAM END = 60 FT

THE CROSS SECTION IS: WIDE SHALLOW ARC
THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y
THE SEGMENT LENGTH IS 60 % POOLS
POOL DEPTH = .7 FT
THE SEGMENT LENGTH IS 40 % RIFFLES
RIFFLE DEPTH = .3 FT

THE BOTTOM TYPE = GRAVEL
SLUDGE DEPOSITS = NONE
AQUATIC PLANTS = NONE
ALGAE OBSERVED = NONE
WATER COLORED GREEN (Y/N) = N

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REGIONAL MODELING SYSTEM VERSION 3.2

DATA FILE SUMMARY

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THE NAME OF THE DATA FILE IS: DALE8-2.MOD

THE STREAM NAME IS: NEABSCO CREEK
THE RIVER BASIN IS: POTOMAC RIVER
THE SECTION NUMBER IS: 07
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: DALE CITY SECTION 8 STP

PROPOSED LIMITS ARE:
FLOW = 4 MGD
BOD5 = 5 MG/L
TKN = 2 MG/L
D.O. = 6 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 1

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON
THE GAUGE NAME IS: QUANTICO CREEK
GAUGE DRAINAGE AREA = 7.64 SQ.MI.
GAUGE 7Q10 = 0 MGD
DRAINAGE AREA AT DISCHARGE = 6.11 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = N
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 26 ½C

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on two draft permits from the Department of Environmental Quality that will allow the release of treated wastewater into two water bodies in Prince William County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2008 to 5:00 p.m. on XXX, 2008

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBERS: Dale Service Corporation, 5609 Mapledale Plaza, Dale City, VA 22193, VA0024678 and VA0024724

NAME AND ADDRESS OF FACILITIES: Dale Service Section 1 STP (VA0024724), 15051 Birchdale Rd, Dale City, VA
Dale Service Section 8 STP (VA0024678), 14420 Delaney Rd, Dale City, VA

PROJECT DESCRIPTION: Dale Service Corporation has applied for two reissuances of two permits for the private Dale Service Section 1 STP and Dale Service Section 8 STP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 4.0 million gallons per day from each facility into two water body. Each permit also allows a future expansion to 4.6 million gallons per day from each facility. Sludge from the treatment processes will be land applied by an approved contractor. The facilities propose to release the treated sewage in Neabsco Creek (VA0024678) and an unnamed tributary to Neabsco Creek (VA0024724) in Prince William County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permits will limit the following pollutants to amounts that protect water quality: pH, BOD, E coli, Ammonia, Total Phosphorus, Total Suspended Solids, Dissolved Oxygen, and Total Nitrogen.

These facilities are subject to the requirements of 9 VAC 25-820 and have registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.
Name: Alison Thompson
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3834 E-mail: althompson@deq.virginia.gov Fax: (703) 583-3841

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Dale Service Section 8 STP
NPDES Permit Number:	VA0024678
Permit Writer Name:	Alison L. Thompson
Date:	5/23/08

Major [X] **Minor** [ ] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit? TN and TP annual loadings were removed since they are governed by the Nutrient GP	X		
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	**Yes**	**No**	**N/A**
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?	X		
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Alison L. Thompson
Title	Environmental Specialist II
Signature	
Date	5/27/08